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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,455	12/14/2001	Carrie E. Aust	RAL920010021US1/1963-7418	1084
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IBM CORPORATION PO BOX 12195 DEPT 9CCA, BLDG 002 RESEARCH TRIANGLE PARK, NC 27709			EXAMINER PERILLA, JASON M	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/014,455

Applicant(s)

AUST ET AL.

Examiner

Jason M Perilla

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/01</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-16 and 18-24 are pending in the instant sound.

#### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on December 14, 2001 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Drawings***

3. The drawings are objected to because of the following reasons:

In figure 1, the reference 110 is utilized two times to designate one output signal according to the specification, the reference 106 is described by the specification to designate both the PN code as well as the communications channel, the reference 100 to the spread spectrum embodiment should be underlined rather than pointing to reference box figure 3, and the reference 104 is specified as both the communications channel and the receiver according to the specification.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims.

Regarding claim 9, the decoding apparatus and the analysis apparatus must be shown or the feature(s) canceled from the claim(s). Of the receiver apparatus in figure 3, the separate correlator (d), decoder (f), and analyzer (g) must be shown. If the Applicant traverses the objection, the Applicant should clearly and definitely define with reference to the drawings how each component of the claim is shown in the drawings. No new matter should be entered.

Regarding claim 10, the selecting apparatus, decoding apparatus, comparing apparatus, and the analysis apparatus must be shown or the feature(s) canceled from the claim(s). Of the receiver apparatus in figure 3, the separate correlator (d), selector (e), decoder (f), comparator (g), and analyzer (h) must be shown. If the Applicant traverses the objection, the Applicant should clearly and definitely define with reference to the drawings how each component of the claim is shown in the drawings. No new matter should be entered.

Regarding claim 11, the selecting, determining, comparing, and determination steps must be shown or the feature(s) canceled from the claim(s). Of the receiver apparatus in figure 3, the separate correlation (d), selection (e), determining (f), comparing (g), and determination (h) must be shown. If the Applicant traverses the objection, the Applicant should clearly and definitely define with reference to the figures how each step of the claim is shown in the drawings. No new matter should be entered.

Regarding claim 10, the selecting apparatus and decoding apparatus must be shown or the feature(s) canceled from the claim(s). Of the receiver apparatus in figure 3, the separate correlator (d), selector (e), and decoder (f) must be shown. If the Applicant traverses the objection, the Applicant should clearly and definitely define with reference to the drawings how each component of the claim is shown in the drawings. No new matter should be entered.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. The disclosure is objected to because of the following informalities:

In page 7, lines 15-20, the specification repeats itself regarding the analog-digital decoder 312.

Appropriate correction is required.

### ***Claim Objections***

7. Claims 1-16 are objected to because of the following informalities:

Regarding claim 1, in line 3, the variables  $\gamma_0$  and  $T$  are not defined, in line 4, the variables  $\cos.\Sigma \gamma_c$  are not defined, in line 5, "the PN coded data signal" is lacking antecedent basis, in line 5-6, it is suggested that "the channel" is replaced by --the communications channel--, in lines 8-9, "the coded data signal" is lacking antecedent

basis, and, in lines 9-10, "the wanted exact measure of the loss" and "the channel under test" are lacking antecedent basis.

Regarding claim 2, in lines 2-3, "the channel" should be replaced by –the communications channel--, in line 4, "to this threshold" should be replaced by –to the threshold--, and in line 6, "trough" should be replaced by –through--.

Regarding claim 3, in line 2, "the frequency" should be replaced by –a frequency— and "the carrier" is lacking antecedent basis, in lines 2-3, "the transmission" and "the data" are both lacking antecedent basis, in line 4, "and measuring the correlation value for each carrier" should be replaced by –determining a correlation value for each adjusted carrier--, in lines 5-6, "the correlation value vs. frequency" should be replaced by –the correlation value for each adjusted carrier frequency against its respective carrier frequency—for clarity of the claim language. Further regarding claim 3, the claim should be based upon claim 2 because it begins at step (h).

Regarding claim 4, in lines 2-3, "the data" and "the transmitted data" are lacking antecedent basis.

Regarding claim 5, in lines 2-3, "the PN code rate" and "the carrier frequency" are lacking antecedent basis.

Regarding claim 6, in line 1, "the length" is replaced by –a length--, and "the PN code sequence" is lacking antecedent basis.

Regarding claim 7, in lines 1-2, "the PN sequence" and "the PN modulated carrier" are lacking antecedent basis.

Regarding claim 8, in lines 1-2, "the predetermined maximum PN code length" and "the threshold value" are lacking antecedent basis.

Regarding claim 9, in line 3, "code generating" should be replaced by --a code generating--, in lines 3-4, the variables  $\gamma_0$  and  $T$  are not defined, in line 5, "carrier modulating" should be replaced by --a carrier modulating-- and the variables  $\cos.\Sigma \gamma_c$  are not defined, in line 7, "data modulating" should be replaced by --a data modulating--, in line 9, "transmitter apparatus" should be replaced by --a transmitter apparatus--, in line 10, "via a communication channel" should be replaced by --via the communications channel--, in lines 10-11, "the channel" should be replaced by --the communications channel--, in line 12, "frequency-controlling apparatus" should be replaced by --a frequency-controlling apparatus--, in line 13, "the data content" is lacking antecedent basis, in line 14, "decoding apparatus" should be replaced by --a decoding apparatus-- and "each frequency" should be replaced by --each carrier frequency--, in line 15, "the coded data signal" should be replaced by --the PN coded data signal--, in line 16, "analysis apparatus" should be replaced by --an analysis apparatus--, and, in line 17, "the frequency dependent loss" is lacking antecedent basis and "the transmission channel" should be replaced by --the communications channel--.

Regarding claim 10, in line 3, "code generating" should be replaced by --a code generating--, in lines 3-4, the variables  $\gamma_0$  and  $T$  are not defined, in line 5, "carrier modulating" should be replaced by --a carrier modulating-- and the variables  $\cos.\Sigma \gamma_c$  are not defined, in line 7, "data modulating" should be replaced by --a data modulating--, in line 9, "transmitter apparatus" should be replaced by --a transmitter apparatus--, in line

10, "via a communication channel" should be replaced by –via the communications channel—, in lines 10-11, "the channel" should be replaced by –the communications channel--, in line 12, "selecting apparatus" should be replaced by –a selecting apparatus--, in line 13, "the channel" should be replaced by –the communications channel--, in line 14, "decoding apparatus" should be replaced by –a decoding apparatus—, in line 15, "the coded data signal" should be replaced by –the PN coded data signal--, in line 16, "comparison apparatus" should be replaced by –a comparison apparatus— and "the correlation value of the PN code" is lacking antecedent basis, in line 18, "analysis apparatus" should be replaced by –an analysis apparatus— and "the correlation variable" is lacking antecedent basis, in line 20, "the channel" should be replaced by –the communications channel— and "or" should be replaced by –of--, and, in line 21, "the channel" should be replaced by –the communications channel--.

Regarding claim 11, in line 3, the variables  $\gamma_0$  and  $T$  are not defined, in line 4, the variables  $\cos.\Sigma \gamma_c$  are not defined, in line 7, "a communications channel" should be replaced by –the communications channel--, in lines 7-8, "the channel" should be replaced by –the communications channel--, in lines 9-10, "the channel" should be replaced by –the communications channel—, in line 14, "the correlation variable" is lacking antecedent basis, and, in lines 16-17, "the channel" should be replaced by –the communications channel— in both instances.

Regarding claim 12, in line 2, "the data" should be replaced by –the data signal— and "the power level" is lacking antecedent basis, and, in lines 2-3, "the transmitted data" is lacking antecedent basis.

Regarding claim 13, “the PN code rate” and “the carrier frequency” are lacking antecedent basis.

Regarding claim 14, in line 1, “the length” is lacking antecedent basis and the word “sequence” should be stricken.

Regarding claim 15, in lines 2-3, “the predetermined maximum PN code length” is lacking antecedent basis.

Regarding claim 16, in line 3, “code generating” should be replaced by –a code generating--, in lines 3-4, the variables  $\gamma_0$  and T are not defined, in line 5, “carrier modulating” should be replaced by –a carrier modulating-- and the variables  $\cos.\Sigma \gamma_c$  are not defined, in line 7, “data modulating” should be replaced by –a data modulating--, in line 9, “transmitter apparatus” should be replaced by –a transmitter apparatus--, in line 10, “via a communication channel” should be replaced by –via the communications channel—, in lines 10-11, “the channel” should be replaced by –the communications channel--, in line 12, “selecting apparatus” should be replaced by –a selecting apparatus--, in line 13, “the channel” should be replaced by –the communications channel--, in line 14, “decoding apparatus” should be replaced by –a decoding apparatus—, and, in line 15, “the coded data signal” should be replaced by –the PN coded data signal--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 1, the claim is not enabled because the specification does not enable one to determine a correlator value *for* extracting a PN code as claimed in line 8. That is, the correlator value is not enabled to be utilized for the extraction of the PN code. Rather, the specification enables the correlator value to be a result of the extraction of the PN code.

Regarding claim 4, the specification does not enable one having skill in the art through the body of the specification to adjust a power level of data. The specification does not disclose data as having a power level.

Regarding claim 8, the claim is not enabled because the specification does not enable one to determine the presence of an unreliable data transmission by able to comparing a PN code length by a threshold value as claimed. Rather, the specification relates to the comparison of a correlation peak of a correlated PN code to a threshold.

Regarding claim 9, the claim is not enabled because the specification does not enable one to determine a correlator value *for* extracting a PN code as claimed in lines 14-15.

Regarding claim 10, the claim is not enabled because the specification does not enable one to determine a correlator value *for* extracting a PN code as claimed in lines 14-15.

Regarding claim 11, the claim is not enabled because the specification does not enable one to determine a correlator value *for* extracting a PN code as claimed in lines 11-12.

Regarding claim 16, the claim is not enabled because the specification does not enable one to determine a correlator value *for* extracting a PN code as claimed in lines 14-15.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-16 and 18-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the claim is indefinite because the measure of loss of the channel is not clearly defined according to the claim or in view of the specification such that one having ordinary skill in the art may properly interpret the meaning of it. The type of "loss" is unclear and open to interpretation. One skilled in the art is unable to determine definitely a meaning of the limitation including a channel loss because it is unclear what the loss is consisting of. Additionally, the claim is indefinite because it is unclear if the signal provided to a correlator contains data. In step (b) a carrier is coded with a PN code, however, in step (c) a PN coded *data* signal is provided. Therefore, the

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claim is indefinite because it is unclear if there is data contained in the signal  $[s(t)]$ . The "data" of the "PN coded data signal" has no clear or definite basis and it makes the claim indefinite.

Regarding claims 2, the claim is rejected as being based upon a rejected parent claim.

Regarding claim 3, the claim is indefinite for the same reasons as applied to claim 1 above regarding "frequency dependent loss" in line 5.

Regarding claims 4-6, the claims are rejected as being based upon a rejected parent claim.

Regarding claim 7, the claim is indefinite because one skilled in the art is unable to determine how to modulate the PN sequence, the carrier, and the PN modulated carrier separately because the PN modulated carrier is comprised of the PN sequence and the carrier.

Regarding claim 8, the claim is indefinite because there is no threshold value to exceed.

Regarding claim 9, the claim is rejected for the same reasons as applied to claim 1 above regarding "frequency dependent loss" in line 17.

Claims 18-24 are rejected as being indefinite because the referenced parent claim 17 is not present in the case.

12. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: in the case that claim 3 depends directly

upon claim 1, the comparison of the correlation value to a threshold before the adjustment of the carrier frequency.

13. Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the comparison of the correlation value to a threshold before the adjustment of one or more of the power level, the length of the PN code sequence, or carrier frequency.

14. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the comparison of the correlation value to a threshold before the determination of the presence of an unreliable data transmission.

15. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: adjusting the PN code length iteratively to determine the maximum code length not exceeding the threshold value.

16. Claims 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the comparison of the correlation value to a threshold before the adjustment of one or more of the power level, the length of the PN code sequence, or carrier frequency.

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art is cited to show the state of the art with respect to spread spectrum receivers.


U.S. Pat. No. 6163566 to Shiino.

U.S. Pat. No. 6654407 to Moore, III.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jason M. Perilla  
March 24, 2005

jmp

  
**CHIEH M. FAN**  
**PRIMARY EXAMINER**